

**From:** [Weil, Jenny](#)  
**To:** [Freedhoff, Michal](#)  
**Subject:** Re: technical question  
**Date:** Tuesday, January 31, 2012 12:59:20 PM

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Hi Michal,

The staff would classify it as byproduct material, not SNM, under the 10 CFR 50 definition of byproduct material:

Byproduct material means—

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

(2)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that—

(A) Has been made radioactive by use of a particle accelerator; and

(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

(3) Any discrete source of naturally occurring radioactive material, other than source material, that—

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

Sent via BlackBerry  
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**From:** Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>  
**To:** Weil, Jenny  
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**Sent:** Tue Jan 31 11:36:40 2012  
**Subject:** technical question

Hi Jenny and apologies if you're not the right person to ask this of.

I am looking at NRC's definitions:

**10 cfr 110.2:**

*Special nuclear material* means plutonium, uranium-233 or uranium enriched above 0.711 percent by weight in the isotope uranium-235.

*Byproduct material* means

(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or utilizing special nuclear material;

(2) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore (see 10 CFR 20.1003);

(3)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(ii) Any material that has been made radioactive by use of a particle accelerator and is produced, extracted, or converted after extraction, before, on, or after August 8, 2005 for use for a commercial, medical, or research activity; and

(4) Any discrete source of naturally occurring radioactive material, other than source material, that--

(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(ii) Before, on, or after August 8, 2005 is extracted or converted after extraction for use in a commercial, medical, or research activity.

**10 cfr 40.4:**

*Special nuclear material* means: (1) Plutonium, uranium 233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the Act, determines to be special nuclear material; or (2) any material artificially enriched by any of the foregoing.

*Byproduct Material* means the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by such solution extraction operations do not constitute "byproduct material" within this definition.

I am wondering whether tritium falls into the definition of SNM, or whether it is considered by the NRC to be byproduct material if it is produced in a nuclear reactor (ie by TVA)?

Thanks  
Michal

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